

WE CLAIM AS OUR INVENTION:

1. A heart support structure, comprising:
at least one peripheral link configured for attachment to at least one region of
viable heart tissue; and
5 at least one support link having a proximal end and a distal end, the proximal end
configured for attachment to the peripheral link, the support link extendable to and
configured for attachment to a second region of less viable or non-viable heart tissue.
2. The heart support structure of claim 1 wherein the distal end of the support
10 link is configured for attachment to the second region of the less viable or non-viable
heart tissue.
3. The heart support structure of claim 1 wherein the support link is
configured for attachment to the second region proximal to the distal end.
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4. The heart support structure of claim 3 wherein the support link distal end
is configured for attachment to a second peripheral link.
5. The heart support structure of claim 1 further comprising:
20 a plurality of additional peripheral links, each of said plurality of said peripheral
links disposable on a plurality of additional regions of the viable heart tissue such that,
the plurality of peripheral links substantially surround the less viable or non-viable heart
tissue; and
a plurality of additional support links, each of said plurality of additional support
25 links being configured for attachment to (a) the plurality of additional peripheral links
and (b) the second region.

6. The heart support structure of claim 1 further comprising:
a plurality of additional peripheral links, each of said plurality of said peripheral
links disposable on a plurality of additional regions of the viable heart tissue; and
a plurality of additional support links, each of said plurality of said support links
5 being configured for attachment to (a) the plurality of additional peripheral links and (b)
the second region, the support links being further interconnected.

7. The heart support structure of claim 1 wherein the support link comprises
a plurality of turns, each of said plurality of turns defining a constant angle therebetween.

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8. The heart support structure of claim 1 wherein the support link comprises
a plurality of support nodes wherein a distance between adjacent of each said plurality of
support nodes is constant.

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9. The heart support structure of claim 1 wherein the support link is tapered.

10. The heart support structure of claim 1 wherein the support structure is
comprised of a material selected from the group consisting of superelastic alloys,
stainless steel, superelastic polymers, and any combinations thereof.

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11. The heart support structure of claim 10 wherein the superelastic alloy
comprises nickel-titanium.

12. The heart support structure of claim 1 further comprising a coating
25 covering at least a portion of the support structure.

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13. The heart support structure of claim 12 wherein the coating comprises a material selected from the group consisting of thermoplastics, thermoset plastics, silicone, parylene, heparin, thromboresistance substances, antiproliferative substances, platinum, gold, tantalum, tin, tin-indium, zirconium, zirconium alloys, zirconium oxide, zirconium
5 nitrate, phosphatidyl-choline, and pyrolytic carbon.

14. The heart support structure of claim 1 further comprising a radiation source.

10 15. The heart support structure of claim 1 wherein the heart support structure is attachable to the viable heart tissue and the less viable or non-viable heart tissue by a bonding method selected from the group consisting of the use of adhesives, coagulation, and mechanical securing mechanisms.

15 16. The heart support structure of claim 15 wherein the bonding method comprises the use mechanical securing mechanisms and wherein the mechanical securing mechanisms are selected from the group consisting of anchors, sutures, flaps, implantable clips, and staples.

20 17. The heart support structure of claim 16 wherein the mechanical securing mechanisms are each connected to an electrosurgical generator capable of transmitting radio frequency energy into the viable and less viable or non-viable heart tissue.

25 18. The heart support structure of claim 1 further comprising a tissue interface disposed between the support structure and the viable and the less viable or non-viable heart tissue.

19. The heart support structure of claim 18 wherein the tissue interface comprises a material selected from the group consisting of harvested biological material and synthetic graft material.

5 20. The heart support structure of claim 19 wherein the synthetic graft material further comprises a biologically inert coating selected from the group consisting of parylene, heparin solutions, hydrophilic solutions, thromboresistance substances, antiproliferative substances, and endothelial cells.

10 21. The heart support structure of claim 1 further comprising an electromagnetic assist device configured to induce a magnetic field causing an expansion or contraction of the structure.

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a) positioning a support structure over the viable and the less viable or non-viable heart tissue; and

10 one peripheral link and at least one support link.

24. The method of claim 23 further comprising inducing a magnetic field such that the support structure contracts or expands.

or expansion with the natural motion of the heart.

26. A device for transferring energy from viable tissue to less viable or non-viable tissue, comprising:

a support structure secured at a plurality of attachment points to (a) said less viable or non-viable tissue in a central region and (b) said viable tissue extending around
5 said less viable or non-viable tissue.

27. The device of claim 26 wherein said support structure further comprises a plurality of support links, each support link attached at one end to one of a plurality of peripheral links and at another end to selected of said plurality of attachment points, said
10 attachment points located adjacent injured heart tissue.

28. The device of claim 26 wherein the support structure has a generally conical shape.

15 29. The device of claim 27 wherein the support structure has a generally planar shape.

30. The device of claim 26 additionally comprising a tissue interface disposed between (a) the support structure and (b) said viable and less viable or non-viable tissue.
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31. The device of claim 27 wherein the central region comprises a region of multiple intersecting, interlocking, or adjacent support links.